

PATENT CLAIMS

1. A hose (10) for conveying media that generate electrostatic charges, especially powdery media,  
5 which hose (10) comprises a hose wall (12) which encloses an interior (14), which is delimited toward the interior (14) by an inner surface (13), the hose wall (12) being constructed from a flexible, electrically poorly conductive or even  
10 non-conductive base material, and at least one electric line element (17, 18, 19, 21) extending in the longitudinal direction of the hose (10) being integrated into the hose wall (12) in order to dissipate electric charges, characterized in that, in the hose cross section, at least one  
15 region (12, 20, 22, 23, 24) of the hose wall (12) adjoining the interior (14) of the hose (10) has an electrical conductivity that is increased as compared with the base material, and in that the  
20 at least one electric line element (17, 18, 19, 21) is connected directly to the region of increased electrical conductivity (12, 20, 22, 23, 24).
- 25 2. The hose as claimed in claim 1, characterized in that the region having the increased electrical conductivity extends over the entire hose wall (12).
- 30 3. The hose as claimed in claim 2, characterized in that the increased electrical conductivity of the hose wall (12) is brought about by electrically highly conductive particles (16) embedded in the base material.
- 35 4. The hose as claimed in claim 3, characterized in that the base material is an optically transparent polymer, in particular PU, PE or PVC, in that short, electrically highly conductive fibers (16),

- in particular carbon fibers, are embedded in the base material as the electrically highly conductive particles, and in that the concentration of the fibers (16) is chosen such that the hose wall (10) remains optically transparent in the radial direction.
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5. The hose as claimed in claim 4, characterized in that about 1 to 3% by weight of carbon fibers are added to the base material.
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6. The hose as claimed in one of claims 2 to 5, characterized in that the at least one electric line element is formed as a line region (17) let into the hose wall (12) and having an electrical conductivity that is increased considerably as compared with the base material.
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7. The hose as claimed in claim 6, characterized in that the line region (17) that is let in is formed so as to be continuous in the radial direction through the hose wall (12).
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8. The hose as claimed in one of claims 2 to 5, characterized in that the at least one electric line element is formed as a wire (21) or stranded conductor (18) let into the hose wall (12).
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9. The hose as claimed in claim 8, characterized in that the wire or stranded conductor (18) is at a distance from the inner surface (13) of the hose which corresponds approximately to one third of the wall thickness of the hose wall (12).
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10. The hose as claimed in one of claims 6 to 8, characterized in that the line region (17) or the wire (21) or stranded conductor (18) in the hose
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wall (12) runs helically around the hose axis in the longitudinal direction.

- 5      11. The hose as claimed in claim 1, characterized in that the region having the increased electrical conductivity is restricted to a concentric inner region (20) of the hose wall (12) that adjoins the inner surface.
- 10    12. The hose as claimed in claim 1, characterized in that the region having the increased electrical conductivity is formed by an inner sheath (22) arranged concentrically in the interior of the hose (10).
- 15      13. The hose as claimed in claim 11 or 12, characterized in that the increased electrical conductivity in the inner region (20) or in the inner sheath (22) of the hose wall (12) is brought about by electrically highly conductive particles (16) embedded in the base material.
- 20      14. The hose as claimed in claim 13, characterized in that the base material is an optically transparent polymer, in particular PU, PE or PVC, in that short, electrically highly conductive fibers (16), in particular carbon fibers, are embedded in the base material as the electrically highly conductive particles, and in that the
- 25      concentration of the fibers (16) and/or the thickness of the inner region (20) or of the inner sheath (22) is chosen such that the hose wall (10) remains optically transparent in the radial direction.
- 30      15. The hose as claimed in one of claims 11 to 14, characterized in that the at least one electric line element is formed as a line region (17) let
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into the hose wall (12) and having an electrical conductivity that is increased considerably as compared with the base material.

- 5    16.    The hose as claimed in claim 15, characterized in  
that the line region (17) that is let in is formed  
so as to be continuous in the radial direction  
from the outer surface (11) as far as the inner  
region (20) or inner sheath (22).
- 10    17.    The hose as claimed in one of claims 11 to 14,  
characterized in that the at least one electric  
line element is formed as a wire (21) or stranded  
conductor (18) let into the hose wall (12).
- 15    18.    The hose as claimed in claim 17, characterized in  
that the wire (21) or stranded conductor (18) runs  
at the interface between the inner region (20) or  
inner sheath (22) and the remaining hose wall.
- 20    19.    The hose as claimed in one of claims 15 to 18,  
characterized in that the line region (17) or the  
wire (21) or stranded conductor (18) in the hose  
wall (12) runs helically around the hose axis in  
25    the longitudinal direction.
- 30    20.    The hose as claimed in claim 1, characterized in  
that the at least one electric line element is  
formed as a wire (21) or stranded conductor (18)  
let into the hose wall (12), in that the wire (21)  
or stranded conductor (18) is at a distance from  
the inner surface (13) of the hose (10), and in  
that the region having the increased electrical  
conductivity is formed as a local line region (23,  
35    24) enclosing the electric line element (18, 21).
21.    The hose as claimed in claim 20, characterized in  
that the increased electrical conductivity of the

hose wall (12) is brought about by electrically highly conductive particles (16) embedded in the base material.

- 5    22.    The hose as claimed in claim 20 or 21, characterized in that the wire (21) or stranded conductor (18) in the hose wall (12) runs helically around the hose axis in the longitudinal direction.
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23.    The hose as claimed in one of claims 20 to 22, characterized in that the line region (23, 24) that encloses the electric line element (18, 21) is formed concentrically with the electric line
- 15    element (18, 21).
24.    The hose as claimed in one of claims 20 to 22, characterized in that the line region (23, 24) that encloses the electric line element (18, 21)
- 20    has a teardrop-shaped cross section, of which a tip adjoins the interior (14) of the hose (10).
- 25    25.    The hose as claimed in one of claims 1 and 20 to 24, characterized in that the base material of the hose is a polyolefin elastomer.
26.    The use of a hose as claimed in one of claims 1 to 25 for the conveyance of coating powders.